

THE EGG-CAPSULES OF *FASCIOLARIA GIGANTEA* KIENER

BY C. W. JOHNSON

Large clusters of egg-capsules of *Fasciolaria gigantea* are conspicuous objects on the Florida coast. The specimen figured (Plate 4) is in the collection of the Boston Society of Natural History and was collected at Key West, Florida. It was referred to in THE NAUTILUS (Vol. 33, p. 46, 1919). This bunch is nine inches in length and contains approximately 400 capsules, attached to a broad band, which has no doubt contracted considerably in drying. Each capsule is about 40 mm. in length and attached to the band by a short pedicel; the capsule is wedge shaped, the angles slightly winged and the sides with five or six irregular ridges. Three of the capsules contained respectively 66, 70 and 76 embryonic shells. If the entire number should average 70 per capsule, the cluster would produce upward of 30,000 shells. The death rate however is enormous and it is doubtful if one in 5,000 ever reaches maturity. I am still looking for a shell of this species two feet in length as recorded by the older authors.

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## RARE MOLLUSKS FROM NEW JERSEY

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During the past two years the writer has been engaged in making a survey of the marine invertebrate fauna of the coast of New Jersey. A complete report of this survey will be published elsewhere in the near future. However since Mr. C. W. Johnson (1929) inquires concerning certain marine pelecypods that are apparently becoming extinct in southern New England, it may be interesting to mention a few records from New Jersey which concern some of the pelecypods mentioned by Mr. Johnson, and to add a few

notes on other mollusks that have hitherto been considered as unknown or rare in New Jersey.

*Pholas (Barnea) costata* L. popularly known as "Angel wings" is a mollusk which burrows deep into clay or mud. Mr. Johnson says that to his knowledge living specimens have not been taken in southern New England since 1845. Various writers have recorded the shell from New Jersey beaches, but no one in recent years has observed the living animal.

On July 22, 1929, I had the unexpected pleasure of finding a large bed of this mollusk on the shore of Delaware Bay near Green Creek. They were found in shallow water at low tide with their siphons just slightly elevated above the mud. Upon trying to capture them, they burrowed very rapidly some two feet or more into the mud.

Dr. Thurlow C. Nelson collected some individuals at Pierces Point on Delaware Bay, and a Cape May fisherman reported a bed of "queer bivalves" about two feet deep in the mud on the north side of Cape May Harbor. He ate the animal and sent me the shell which proved to be *P. costata*. I have also dredged this species at the entrance of Cape May Harbor in about 20 feet of water.

*Tagellus gibbus* (Spengler) and *T. divisus* (Spengler) also burrow deep in the mud and are seldom seen alive. However both species have been taken alive in the muddy bottom of Cape May Harbor. The shell of *T. gibbus* is very common on the beaches of New Jersey, and at Cape Charles, Virginia, shells with the epidermis intact are frequently found, suggesting that perhaps the species is more common toward the south.

The migration of *Littorina littorea* (L.) southward on the Atlantic coast has been observed for many years. It was first reported in America in Nova Scotia by Willis (1863), where it had probably been introduced from Europe. Since that time it has been gradually migrating southward, and is now very common at Cold Spring Harbor, Long Island, and shells in the Academy of Natural Sciences of Phila-

delphia and the United States National Museum, Washington, indicate its presence as far south as Atlantic City, N. J. *L. litorea* is a rock-inhabiting form, and therefore its presence would not be expected on the sandy beaches of New Jersey; however when rock jetties are built this form frequently appears. It has been taken from the rock jetty at Longport, N. J. (Acad. Nat. Sci.), and I collected several living individuals from the Rock Pile at Cape May, N. J., on May 20, 1928. I think that this is the farthest south that this species has ever been recorded. Wood and Wood (1927) say that *L. litorea* clings to grass in the salt marshes of Two Mile Beach, N. J. Since this species is always found associated with rocks and not in the locations mentioned by the Messrs. Wood, they undoubtedly refer to *L. irrorata* (Say) which is common in the marshes of Cape May County.

*Littorina rudis* (Donovan) and *L. palliata* (Say) have also been taken as far south as Cape May, N. J.

*Alectrion vibex* (Say) has not been seen alive in New Jersey by the writer, although fresh shells are frequently found on the beach. The absence of this species is interesting since some of Say's original specimens were from Great Egg Harbor, N. J., and Verrill (1873) had found it among Eel Grass at the same locality.

The species is common farther south, and was observed in considerable numbers at Cape Charles, Virginia, on June 16, 1929.

Numerous other mollusks, new or rare for the state, will be discussed in the complete report.

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